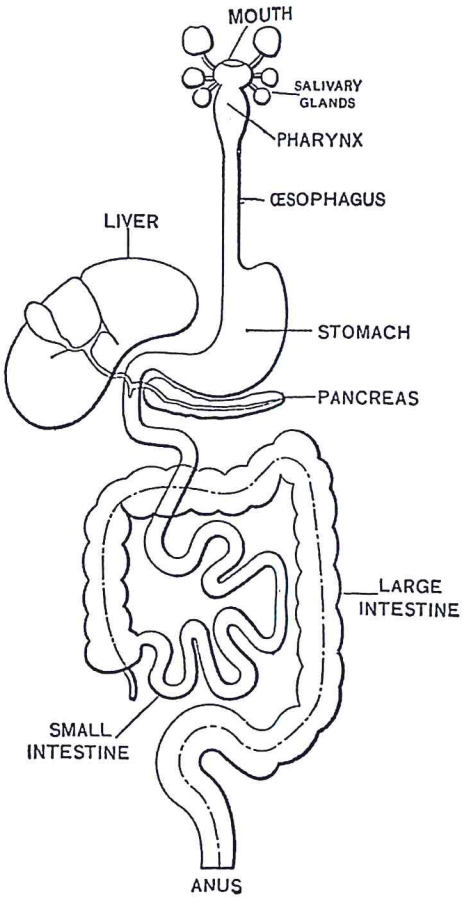
Digestive vs. Urinary System

It's not totally unreasonable to confuse the two because the parts we can see, urination and feces, look to us like waste removal... Something came in through our mouths, underwent some fundamental change in our body, then came out of its respective orifice.

The reality is that these two systems are entirely distinct, both anatomically, and physiologically!

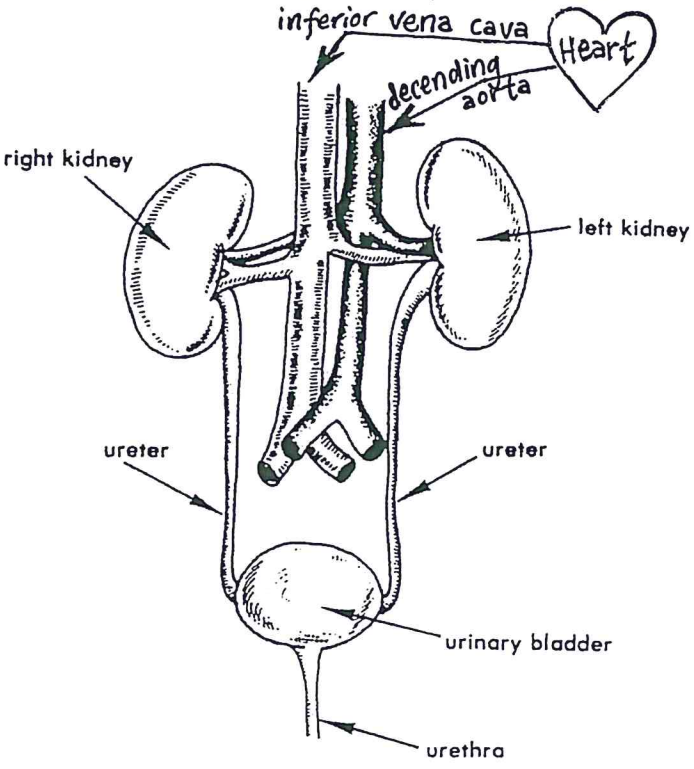


The digestive system:

The digestive system is a tube, housed within our bodies, which serves to mechanically and chemically break down food (macromolecules) into transportable nutrients (monomers) for *absorption* into the blood along with the water we drink. Absorption of monomers occurs in the small intestine and the majority of water absorption occurs in the large intestine. Each discrete component of the system serves a set of physiological roles that facilitate this process, which is highly specific and in ONE direction beginning with ingestion of food and ending with defecation of the dehydrated remains of the food that wasn't absorbed. Feces are the leftover **food that never actually entered your body**.

The urinary system:

The urinary system is an interface between the blood circulatory system and a system of numerous, highly specialized, tubes (housed in the kidneys) that selectively filter the blood. **Your cells create waste** during cellular respiration that needs to be removed from the body. The filtration process fulfills two critical functions: **1.) maintain an essentially constant chemical composition of the blood and 2.) regulate the volume of blood by controlling the amount of water that is dissolved in it.**



Thus, we can see from these two diagrams that these two systems, while functionally related by their role in waste disposal, are actually anatomically and physiologically distinct.

Though, it's worth noting, that in the grand scheme of things *all* systems within the body are anatomically and physiologically related as we are the sum of their properties.

Directions: In the Venn diagram below, list 5 things that each system has that are unique to that system. Then list 3 things that the 2 systems share in common. Use complete academic sentences.